CLAIMS

1. A Her2 and/or EGFR inhibitor to be administered to a subject determined to show overexpression or activation of Her2 and/or EGFR as a result of a diagnosis of the subject for the expression or activity of Her2 and/or EGFR based on a test for detecting the expression or activity of Her2 and/or EGFR.

2. The inhibitor of claim 1 to be administered to a subject determined to show activation of Her2 and/or EGFR as a result of a diagnosis of the subject for the activity of Her2 and/or EGFR based on a test for detecting the activity of Her2 and/or EGFR.

3. The inhibitor of claim 1 to be administered to a subject determined to show overexpression or activation of Her2 and EGFR as a result of a diagnosis of the subject for the expression or activity of Her2 and EGFR based on a test for detecting the expression or activity of Her2 and EGFR.

4. The inhibitor of claim 3 to be administered to a subject determined to show activation of Her2 and EGFR as a result of a diagnosis of the subject for the activity of Her2 and EGFR based on a test for detecting the activity of Her2 and EGFR.

5. The inhibitor of any of claims 1 to 4, wherein the subject is a patient expected to suffer from a disease caused by overexpression or activation of Her2 and/or EGFR.

6. The inhibitor of any of claims 1 to 4, wherein the subject is a patient expected to suffer from a disease caused by overexpression or activation of Her2 and EGFR.

7. The inhibitor of any of claims 1 to 6, wherein the subject is a human.

8. The inhibitor of any of claims 1 to 4, wherein the test for detecting the expression or activity of Her2 and/or EGFR is an extracorporeal test.

9. The inhibitor of any of claims 1 to 4, wherein the test for detecting the expression or activity of Her2 and EGFR is an extracorporeal test.

10. The inhibitor of claim 3, which is a mixture of a Her2 inhibitor and an EGFR inhibitor.

11. The inhibitor of any of claims 1 to 9, which is used for administering a Her2 inhibitor and/or an EGFR inhibitor simultaneously, separately or at time intervals.

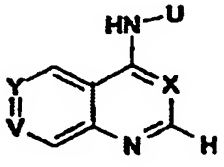
12. The inhibitor of claim 8 or 9, wherein the extracorporeal test is an immunological method using an antibody, or a hybridization method using a nucleic acid and a nucleic acid derivative.

13. The inhibitor of claim 12, wherein the immunological method using an antibody is selected from the group consisting of an enzyme-linked immunosorbent assay, an enzyme-linked immunoassay, a radioimmunoassay, an immunohistochemical method and western blotting.

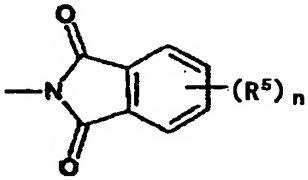
14. The inhibitor of claim 12, wherein the hybridization method using a nucleic acid and a nucleic acid derivative is selected from the group consisting of an RT-PCR method, an ISH method, a FISH method, northern blotting and southern blotting

method.

15. The inhibitor of any of claims 1 to 14, which is a substituted heteroaromatic compound represented by the following formula (I)



(I)



(a)

wherein X is N or CH; Y is CR^1 and V is N; or Y is N and V is CR^1; or Y is CR^1 and V is CR^2; or Y is CR^2 and V is CR^1; R^1 is C_{1-4} alkyl, C_{1-4} alkoxy, $CH_3SO_2CH_2CH_2NHCH_2$–Ar– (wherein Ar is selected from phenyl, furan, thiophene, pyrrole and thiazole, each of which is optionally substituted by 1 or 2 halogens, C_{1-4} alkyl or C_{1-4} alkoxy on demand) or –C=C–C(R^6)(R^7)(R^8) (wherein R^6, R^7 and R^8 are each independently a hydrogen atom, hydroxy, halogen, C_{1-4} alkyl or C_{1-4} alkoxy, or C_{3-6} cycloalkyl wherein the ring is optionally substituted by hydrogen atom or C_{1-4} alkyl and optionally contains 1 or 2 hetero atoms selected from O, S and N therein; R^2 is selected from the group consisting of hydrogen, halogen, hydroxy, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} alkylamino, di[C_{1-4} alkyl]amino and –NHCO–R^9 (wherein R^9 is C_{1-4} alkyl, C_{1-4} alkoxy, C_{2-4} alkenyl or C_{2-4} alkynyl); U is phenyl, pyridyl, 3H-imidazolyl, indolyl, isoindolyl, indolinyl, isoindolinyl, 1H-indazolyl, 2,3-dihydro-1H-indazolyl, 1H-benzimidazolyl, 2,3-dihydro-1H-benzimidazolyl or 1H-benzotriazolyl group, each of which is substituted by R^3 group and optionally substituted on demand by at least one R^4 group selected independently; R^3 is selected from the group consisting of benzyl, halo-, dihalo- and trihalobenzyl,

benzoyl, pyridylmethyl, pyridylmethoxy, phenoxy, benzyloxy, halo-, dihalo- and tribenzyloxy and benzenesulfonyl; or R^3 is trihalomethylbenzyl or trihalomethylbenzyloxy; or R^3 is a group of the above-mentioned formula (a) (wherein each R^5 is independently selected from halogen, C_{1-4} alkyl and C_{1-4} alkoxy; and n is 0-3); each R^4 is independently hydroxy, halogen, C_{1-4} alkyl, C_{2-4} alkenyl, C_{2-4} alkynyl, C_{1-4} alkoxy, amino, C_{1-4} alkylamino, di[C_{1-4} alkyl]amino, C_{1-4} alkylthio, C_{1-4} alkylsulfinyl, C_{1-4} alkylsulfonyl, C_{1-4} alkylcarbonyl, carboxy, carbamoyl, C_{1-4} alkoxycarbonyl, C_{1-4} alkanoylamino, N-(C_{1-4} alkyl)carbamoyl, N,N-di(C_{1-4} alkyl)carbamoyl, cyano, nitro or trifluoromethyl, or a pharmaceutically acceptable salt thereof, a hydrate or solvate thereof, an optically active substance or a racemate thereof, or a mixture of diastereomers thereof.

16. The inhibitor of any of claims 1 to 15, which is (4-(3-fluorobenzyloxy)-phenyl)-(6-(5-((2-methanesulfonyl-ethylamino)methyl)-furan-2-yl)-pyrido[3,4-d]pyrimidin-4-yl)-amine;

(4-benzyloxyphenyl)-(6-(5-((2-methanesulfonyl-ethylamino)-methyl)-furan-2-yl)-quinazolin-4-yl)-amine;

N-{4-[(3-fluorobenzyl)oxy]phenyl}-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine;

N-[4-(benzyloxy)phenyl]-7-methoxy-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine;

N-(1-benzyl-1H-indazol-5-yl)-7-methoxy-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine;

N-{3-fluoro-4-[(3-fluorobenzyl)oxy]phenyl}-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-

quinazolinamine;

N-[1-(3-fluorobenzyl)-1H-indazol-5-yl]-6-[2-({[2-(methylsulfonyl)ethyl]amino}methyl)-1,3-thiazol-4-yl]-4-quinazolinamine;

6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-N-[4-(phenylsulfonyl)phenyl]-4-quinazolinamine;

N-{3-fluoro-4-[(3-fluorobenzyl)oxy]phenyl}-6-[2-({[2-(methylsulfonyl)ethyl]amino}methyl)-1,3-thiazol-4-yl]-4-quinazolinamine;

N-(1-benzyl-1H-indazol-5-yl)-6-[2-({[2-(methylsulfonyl)ethyl]amino}methyl)-1,3-thiazol-4-yl]-4-quinazolinamine;

N-(3-fluoro-4-benzyloxyphenyl)-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-4-furyl]-4-quinazolinamine;

N-(3-chloro-4-benzyloxyphenyl)-6-[2-({[2-(methylsulfonyl)ethyl]amino}methyl)-4-furyl]-4-quinazolinamine;

N-{3-chloro-4-[(3-fluorobenzyl)oxy]phenyl}-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine;

N-(1-benzyl-1H-indazol-5-yl)-7-fluoro-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine;

N-(3-trifluoromethyl-4-benzyloxyphenyl)-6-[5-({[2-(methylsulfonyl)ethyl]amino}methyl)-4-furyl]-4-quinazolinamine;

N-[4-(3-chloro-4-fluorophenyl)amino-7-[3-(4-morpholinyl)propoxy]quinazolin-6-yl]acrylamide;

N-{4-[(3-chloro-4-fluorophenyl)amino]-7-[3-methyl-3-(4-methyl-1-piperazinyl)-1-butynyl]-6-quinazolinyl}acrylamide; or

N-{3-chloro-4-[(3-fluorobenzyl)oxy]phenyl}-6-[5-({[2-(methanesulfonyl)ethyl]amino}methyl)-2-furyl]-4-

quinazolinamine, or a pharmaceutically acceptable salt thereof, a hydrate or a solvate thereof, an optically active substance or a racemate thereof, or a mixture of diastereomers thereof.

17. The inhibitor of any of claims 1 to 16, which is N-[4-(3-chloro-4-fluorophenyl)amino]-7-[3-(4-morpholinyl)propoxy]quinazolin-6-yl]acrylamide, or N-{3-chloro-4-[(3-fluorobenzyl)oxy]phenyl}-6-[5-({[2-(methanesulfonyl)ethyl]amino}methyl)-2-furyl]-4-quinazolinamine or a pharmaceutically acceptable salt thereof, a hydrate or a solvate thereof, an optically active substance or a racemate thereof, or a mixture of diastereomers thereof.

18. A pharmaceutical composition comprising an inhibitor of any of claims 1 to 17 as an active ingredient and a pharmaceutically acceptable carrier.

19. The pharmaceutical composition of claim 18, which is an agent for the prophylaxis and/or treatment of a disease caused by overexpression or activation of Her2 and/or EGFR.

20. The pharmaceutical composition of claim 19, wherein the disease caused by the overexpression or activation of Her2 and/or EGFR is cancer, angiogenesis associated with the growth of cancer or sarcoma, angiogenesis associated with cancer metastasis, angiogenesis associated with diabetic retinopathy, arteriosclerosis or psoriasis.

21. An agent for the prophylaxis and/or treatment of a disease caused by overexpression or activation of Her2 and/or EGFR, which is to be administered to a subject determined to show overexpression or activation of Her2 and/or EGFR as a result

of a diagnosis of the subject for the expression or activity of Her2 and/or EGFR based on a test for detecting the expression or activity of Her2 and/or EGFR.

22. The agent of claim 21, wherein the disease caused by overexpression or activation of Her2 and/or EGFR is cancer, angiogenesis associated with the growth of cancer or sarcoma, angiogenesis associated with cancer metastasis, angiogenesis associated with diabetic retinopathy, arteriosclerosis or psoriasis.

23. A method for the prophylaxis and/or treatment of a disease caused by overexpression or activation of Her2 and/or EGFR, which comprises administering an effective dose of a Her2 and/or an EGFR inhibitor to a subject determined to show overexpression or activation of Her2 and/or EGFR as a result of a diagnosis of the subject for the expression or activity of Her2 and/or EGFR based on a test for detecting the expression or activity of Her2 and/or EGFR.

24. The method of claim 23, wherein the disease caused by overexpression or activation of Her2 and/or EGFR is cancer, angiogenesis associated with the growth of cancer or sarcoma, angiogenesis associated with cancer metastasis, angiogenesis associated with diabetic retinopathy, arteriosclerosis or psoriasis.

25. A commercial package comprising the pharmaceutical composition of any of claims 18 to 20 and a written matter associated therewith, the written matter stating that the pharmaceutical composition can or should be used for the prophylaxis and/or treatment of a disease caused by overexpression or activation of Her2 and/or EGFR.

26. The commercial package of claim 25, wherein the disease caused by overexpression or activation of Her2 and/or EGFR is cancer, angiogenesis associated with the growth of cancer or sarcoma, angiogenesis associated with cancer metastasis, angiogenesis associated with diabetic retinopathy, arteriosclerosis or psoriasis.